**T10D09 – Organic Review Continued**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Functional Group** | **R - functional group** | **As Prefix** | **As Suffix** | **Example** | **Isomeric Example** | **Homologous Example** | **BP of Homologous** |
| Methyl- | *- CH3* | *methyl-* | *X* | *2-methylpentane*  *CH­3­CH(CH3)(CH2)2(CH3)* | *3-methylpentane*  *CH­3­CH2CH(CH3)CH2(CH3)* | *2-methylpropane*  *CH­3­CH(CH3)CH3* | *Pentane BP is higher than propane bc of van der waals* |
| Ethyl- |  |  |  |  |  |  |  |
| Alkene |  |  |  |  |  |  |  |
| Alcohol |  |  |  |  |  |  |  |
| Amine |  |  |  |  |  |  |  |
| Aldehyde |  |  |  |  |  |  |  |
| Keytone |  |  |  |  |  |  |  |
| Carboxylic Acid |  |  |  |  |  |  |  |
| Amide |  |  |  |  |  |  |  |
| Ester |  |  |  |  |  |  |  |
| Nitrile |  |  |  |  |  |  |  |
| Halogen |  |  |  |  |  |  |  |

1. Intermolecular Forces:
   1. Which of the following above is able to have hydrogen bonding? Show using water:
   2. Explain how chain length and functional groups effect the volatility of compounds:
   3. Explain how chain length and functional groups effect the solubility of compounds:
2. Equations for alkanes/alkenes:
   1. Give equations for all the possible additions to ethene:
   2. Give equations for all the possible additions to ethane:
3. Equations for Alcohols:
   1. Draw 3 isomeric alcohols, one with a primary alcohol, one with a secondary, and one with a tertiary
   2. Give an equation for the replacement of primary alcohols:
   3. Give an equation for the replacement of secondary alcohols:
   4. Give an equation for the replacement of tertiary alcohols:
4. Polymers
   1. Using three examples of polymers, describe and demonstrate how they are formed (use 3 repeating units):

**1.** Propane, C3H8, undergoes incomplete combustion in a limited amount of air. Which products are most likely to be formed during this reaction?

A. Carbon monoxide and water

B. Carbon monoxide and hydrogen

C. Carbon dioxide and hydrogen

D. Carbon dioxide and water

(Total 1 mark)

**2.** Which products can be potentially obtained from crude oil and are economically important?

I. Plastics  
II. Margarine  
III. Motor fuel

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

(Total 1 mark)

**3.** Which compound forms when hydrogen bromide is added to but-2-ene?

A. 2-bromobutane

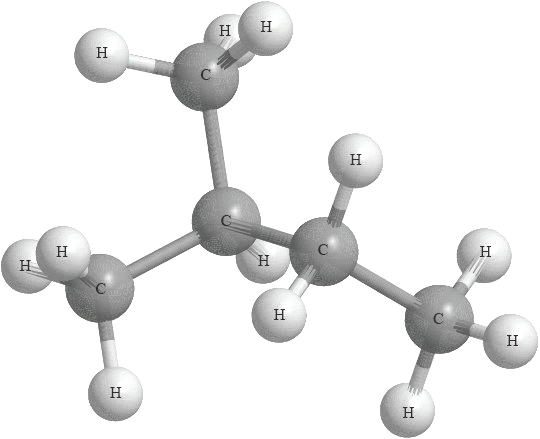
B. 2,3-dibromobutane

C. 1-bromobutane

D. 1,2-dibromobutane

(Total 1 mark)

**4.** The following is a three-dimensional representation of an organic molecule.



Which statement is correct?

A. The correct IUPAC name of the molecule is 2-methylpentane.

B. All the bond angles will be approximately 90°.

C. One isomer of this molecule is pentane.

D. The boiling point of this compound would be higher than that of pentane.

(Total 1 mark)

**5.** An organic compound **X** reacts with excess acidified potassium dichromate(VI) to form compound **Y**, which reacts with sodium carbonate to produce CO2(g).

What is a possible formula for compound **X**?

A. CH3CH2COOH

B. CH3CH2CH2OH

C. CH3CH(OH)CH3

D. (CH3)3COH

(Total 1 mark)

**6.** Which species is a free radical?

A. •CH3

B. +CH3

C. –CH3

D. :CH3

(Total 1 mark)

**7.** Which species reacts most readily with propane?

A. Br2

B. Br•

C. Br–

D. Br+

(Total 1 mark)